

Simone Carmignato

List of Publications by Year in descending order

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137
papers

4,380
citations

147801

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123424

61
g-index

141
all docs

141
docs citations

141
times ranked

3254
citing authors

#	ARTICLE	IF	CITATIONS
1	Special issue on metrology in manufacturing – Editorial. Measurement Science and Technology, 2022, 33, 040101.	2.6	1
2	Multiaxial plain and notch fatigue strength of thick-walled ductile cast iron EN-GJS-600-3: Combining multiaxial fatigue criteria, theory of critical distances, and defect sensitivity. International Journal of Fatigue, 2022, 156, 106703.	5.7	20
3	Comparative Metrological Characterization of Ti-6Al-4V Lattice Structures Produced by Laser-Powder Bed Fusion. , 2022, , 235-250.		1
4	Effect of heat treatment temperature and turning residual stresses on the plain and notch fatigue strength of Ti-6Al-4V additively manufactured via laser powder bed fusion. International Journal of Fatigue, 2022, 162, 107009.	5.7	22
5	Reference object for traceability establishment in X-ray computed tomography measurements of fiber length in fiber-reinforced polymeric materials. Precision Engineering, 2022, 77, 33-39.	3.4	4
6	Contrast based method for the automated analysis of transfer functions and spatial resolution limits of micro- and nano-focus computed tomography systems: Evaluation with simulated data. Optics and Lasers in Engineering, 2022, 157, 107113.	3.8	2
7	Advances in the metrological traceability and performance of X-ray computed tomography. CIRP Annals - Manufacturing Technology, 2022, 71, 693-716.	3.6	14
8	Analysis of an as-built metal additively manufactured tool cavity insert performance and advantages for plastic injection moulding. Journal of Manufacturing Processes, 2021, 61, 369-382.	5.9	12
9	Pore-Scale Transport and Two-Phase Fluid Structures in Fibrous Porous Layers: Application to Fuel Cells and Beyond. Transport in Porous Media, 2021, 136, 245-270.	2.6	8
10	Uniaxial static mechanical properties of regular, irregular and random additively manufactured cellular materials: Nominal vs. real geometry. Forces in Mechanics, 2021, 2, 100007.	2.8	10
11	X-ray computed tomography. Nature Reviews Methods Primers, 2021, 1, .	21.2	305
12	A novel tomographic characterisation approach for sag and dross defects in metal additively manufactured channels. Additive Manufacturing, 2021, 39, 101892.	3.0	4
13	Characterization of Geometry and Surface Texture of AlSi10Mg Laser Powder Bed Fusion Channels Using X-ray Computed Tomography. Applied Sciences (Switzerland), 2021, 11, 4304.	2.5	3
14	Additively manufactured Ti-6Al-4V thin struts via laser powder bed fusion: Effect of building orientation on geometrical accuracy and mechanical properties. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 119, 104495.	3.1	40
15	Experimental and computational evaluation of tensile properties of additively manufactured hexa- and tetrachiral auxetic cellular structures. Additive Manufacturing, 2021, 45, 102022.	3.0	15
16	Plain and notch fatigue strength of thick-walled ductile cast iron EN-GJS-600-3: A double-notch critical distance approach to defect sensitivity. International Journal of Fatigue, 2021, 152, 106414.	5.7	15
17	Dimensional verification of metal additively manufactured lattice structures by X-ray computed tomography: Use of a newly developed calibrated artefact to achieve metrological traceability. Additive Manufacturing, 2021, 47, 102229.	3.0	6
18	The influence of geometric defects and microstructure in the simulation of the mechanical behaviour of laser powder-bed fusion components: Application to endoprosthesis. Journal of Manufacturing Processes, 2021, 71, 541-549.	5.9	4

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19	Effects of powder reuse on the microstructure and mechanical behaviour of Al-Mg-Sc-Zr alloy processed by laser powder bed fusion (LPBF). Additive Manufacturing, 2020, 36, 101625.	3.0	24
20	Quality enhancement of microstructure and surface topography of NiTi parts produced by laser powder bed fusion. CIRP Journal of Manufacturing Science and Technology, 2020, 31, 575-582.	4.5	8
21	Dimensional artefacts to achieve metrological traceability in advanced manufacturing. CIRP Annals - Manufacturing Technology, 2020, 69, 693-716.	3.6	56
22	Assessment of Gradient-Based Algorithm for Surface Determination in Multi-Material Gap Measurements by X ray Computed Tomography. Materials, 2020, 13, 5650.	2.9	3
23	Assessment and verification of mean effective diameter of internal channels fabricated by laser powder bed fusion. Procedia CIRP, 2020, 94, 414-418.	1.9	2
24	The effect of strut size on microstructure and compressive strength of porous Ti6Al4V lattices printed via Direct Ink Writing. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 787, 139484.	5.6	18
25	Solute transport and reaction in porous electrodes at high Schmidt numbers. Journal of Fluid Mechanics, 2020, 896, .	3.4	16
26	An In Vivo Study in Rat Femurs of Bioactive Silicate Coatings on Titanium Dental Implants. Journal of Clinical Medicine, 2020, 9, 1290.	2.4	5
27	Investigation on Tomographic-Based Nondestructive Characterization of Short Glass Fiber-Reinforced Composites as Obtained From Micro Injection Molding. Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, 2020, 3, .	0.9	4
28	Conformation and mechanics of the polymeric cuff of artificial urinary sphincter. Mathematical Biosciences and Engineering, 2020, 17, 3894-3908.	1.9	2
29	Benchmarking of Laser Powder Bed Fusion Machines. Journal of Manufacturing and Materials Processing, 2019, 3, 85.	2.2	20
30	Effect of long-term irrigation and tillage practices on X-ray CT and gas transport derived pore-network characteristics. Soil Research, 2019, 57, 657.	1.1	11
31	Geometrical metrology for metal additive manufacturing. CIRP Annals - Manufacturing Technology, 2019, 68, 677-700.	3.6	193
32	X-Ray Computed Tomography for Dimensional Metrology. Precision Manufacturing, 2019, , 1-48.	0.1	0
33	Characterisation of additively manufactured metal surfaces by means of X-ray computed tomography and generalised surface texture parameters. CIRP Annals - Manufacturing Technology, 2019, 68, 515-518.	3.6	42
34	On the effect of geometrical imperfections and defects on the fatigue strength of cellular lattice structures additively manufactured via Selective Laser Melting. International Journal of Fatigue, 2019, 124, 348-360.	5.7	119
35	A methodology for 3D geometrical characterisation of microfluidic channels using optical microscopy. Journal of Micromechanics and Microengineering, 2019, 29, 045011.	2.6	1
36	Traceable Porosity Measurements in Industrial Components Using X-Ray Computed Tomography. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2019, 141, .	2.2	23

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37	Towards Optimization of 1/4-Injection Molding Process for a New V-shaped Geometrical Component Using X-Ray CT-Based Quality Characterization. <i>Journal of Manufacturing and Materials Processing</i> , 2019, 3, 13.	2.2	4
38	Enhancing fiber length measurements performed by X-ray computed tomography for improving the production quality of composite materials. <i>Procedia CIRP</i> , 2019, 86, 151-155.	1.9	0
39	New Approach for Verifying the Accuracy of X-ray Computed Tomography Measurements of Surface Topographies in Additively Manufactured Metal Parts. <i>Journal of Nondestructive Evaluation</i> , 2019, 38, 1.	2.4	20
40	Particle based method and X-ray computed tomography for pore-scale flow characterization in VRFB electrodes. <i>Energy Storage Materials</i> , 2019, 16, 91-96.	18.0	39
41	X-Ray Computed Tomography for Dimensional Metrology. <i>Precision Manufacturing</i> , 2019, , 537-583.	0.1	1
42	Precision additive manufacturing of NiTi parts using micro direct metal deposition. <i>International Journal of Advanced Manufacturing Technology</i> , 2018, 96, 3729-3736.	3.0	17
43	Experimental analysis of mechanical properties and microstructure of long glass fiber reinforced polypropylene processed by rapid heat cycle injection molding. <i>Composites Part A: Applied Science and Manufacturing</i> , 2018, 107, 366-373.	7.6	20
44	Uncertainty determination for X-ray computed tomography wear assessment of polyethylene hip joint prostheses. <i>Precision Engineering</i> , 2018, 52, 477-483.	3.4	14
45	Principles of X-ray Computed Tomography. , 2018, , 25-67.		18
46	Applications of CT for Dimensional Metrology. , 2018, , 333-369.		12
47	Qualification and Testing of CT Systems. , 2018, , 185-228.		7
48	Low- and high-cycle fatigue resistance of Ti-6Al-4V ELI additively manufactured via selective laser melting: Mean stress and defect sensitivity. <i>International Journal of Fatigue</i> , 2018, 107, 96-109.	5.7	202
49	Generalization of profile texture parameters for additively manufactured surfaces. <i>Journal of Physics: Conference Series</i> , 2018, 1065, 212019.	0.4	2
50	X-ray computed tomography for metal additive manufacturing: challenges and solutions for accuracy enhancement. <i>Procedia CIRP</i> , 2018, 75, 114-118.	1.9	22
51	Effect of the geometrical defectiveness on the mechanical properties of SLM biomedical Ti6Al4V lattices. <i>Procedia Structural Integrity</i> , 2018, 13, 161-167.	0.8	36
52	Enhanced dimensional measurement by fast determination and compensation of geometrical misalignments of X-ray computed tomography instruments. <i>CIRP Annals - Manufacturing Technology</i> , 2018, 67, 523-526.	3.6	19
53	Fusion of photogrammetry and coherence scanning interferometry data for all-optical coordinate measurement. <i>CIRP Annals - Manufacturing Technology</i> , 2018, 67, 599-602.	3.6	8
54	Measurement of the X-ray computed tomography instrument geometry by minimization of reprojection errorsâ€”Implementation on simulated data. <i>Precision Engineering</i> , 2018, 54, 7-20.	3.4	19

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55	Multi-material gap measurements using dual-energy computed tomography. Precision Engineering, 2018, 54, 420-426.	3.4	4
56	Measurement of the X-ray computed tomography instrument geometry by minimization of reprojection errors – Implementation on experimental data. Precision Engineering, 2018, 54, 107-117.	3.4	14
57	Porosity measurements by X-ray computed tomography: Accuracy evaluation using a calibrated object. Precision Engineering, 2017, 49, 377-387.	3.4	56
58	High speed pulsed laser cutting of LiCoO ₂ Li-ion battery electrodes. Optics and Laser Technology, 2017, 94, 90-96.	4.6	23
59	Influence of surface roughness on computed tomography dimensional measurements. CIRP Annals - Manufacturing Technology, 2017, 66, 499-502.	3.6	40
60	Analysis of the shrinkage of injection-molded fiber-reinforced thin-wall parts. Materials and Design, 2017, 132, 496-504.	7.0	38
61	Simulating the influence of scatter and beam hardening in dimensional computed tomography. Measurement Science and Technology, 2017, 28, 104001.	2.6	22
62	Two-spheres method for evaluating the metrological structural resolution in dimensional computed tomography. Measurement Science and Technology, 2017, 28, 114002.	2.6	36
63	Fatigue properties of Ti6Al4V cellular specimens fabricated via SLM: CAD vs real geometry. Procedia Structural Integrity, 2017, 7, 116-123.	0.8	21
64	Quantification of Wear and Deformation in Different Configurations of Polyethylene Acetabular Cups Using Micro X-ray Computed Tomography. Materials, 2017, 10, 259.	2.9	13
65	Establishment of metrological traceability in porosity measurements by x-ray computed tomography. , 2017, , .		5
66	Micro X-Ray Computed Tomography Mass Loss Assessment of Different UHMWPE: A Hip Joint Simulator Study on Standard vs. Cross-Linked Polyethylene. PLoS ONE, 2017, 12, e0170263.	2.5	10
67	May the surface roughness of the retrieved femoral head influence the wear behavior of the polyethylene liner?. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2016, 104, 1374-1385.	3.4	5
68	Economic benefits of metrology in manufacturing. CIRP Annals - Manufacturing Technology, 2016, 65, 495-498.	3.6	40
69	Pulsed Laser Profiling of Grinding Wheels at Normal and Quasi-Tangential Incidence. Lasers in Manufacturing and Materials Processing, 2016, 3, 158-173.	2.2	8
70	Quality and Productivity Considerations for Laser Cutting of LiFePO ₄ and LiNiMnCoO ₂ Battery Electrodes. Procedia CIRP, 2016, 42, 433-438.	1.9	10
71	Micro-drilling and Threading of the Ti6Al4V Titanium Alloy Produced through Additive Manufacturing. Procedia CIRP, 2016, 46, 583-586.	1.9	26
72	Porosity testing methods for the quality assessment of selective laser melted parts. CIRP Annals - Manufacturing Technology, 2016, 65, 201-204.	3.6	134

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73	Reference object for evaluating the accuracy of porosity measurements by X-ray computed tomography. Case Studies in Nondestructive Testing and Evaluation, 2016, 6, 122-127.	1.7	30
74	Influence of surface roughness on X-ray computed tomography dimensional measurements of additive manufactured parts. Case Studies in Nondestructive Testing and Evaluation, 2016, 6, 104-110.	1.7	40
75	Evaluating the effects of detector angular misalignments on simulated computed tomography data. Precision Engineering, 2016, 45, 230-241.	3.4	27
76	Enhancing multisensor data fusion on light sectioning coordinate measuring systems for the in-process inspection of freeform shaped parts. Precision Engineering, 2016, 45, 209-215.	3.4	4
77	Micro porosity analysis in additive manufactured NiTi parts using micro computed tomography and electron microscopy. Materials and Design, 2016, 90, 745-752.	7.0	57
78	Elastic-properties measurement at high temperatures through contact resonance atomic force microscopy. AIP Conference Proceedings, 2015, , .	0.4	4
79	A Testpart for Interdisciplinary Analyses in Micro Production Engineering. Procedia CIRP, 2015, 28, 106-112.	1.9	7
80	Enhancing the accuracy of high-speed laser triangulation measurement of freeform parts at elevated temperature. CIRP Annals - Manufacturing Technology, 2015, 64, 499-502.	3.6	20
81	Laser Profiling of Aluminum Oxide Grinding Wheels. , 2015, , .		1
82	Laser cutting of lithium iron phosphate battery electrodes: Characterization of process efficiency and quality. Optics and Laser Technology, 2015, 65, 164-174.	4.6	38
83	Lithium iron phosphate battery electrode integrity following high speed pulsed laser cutting. Applied Physics A: Materials Science and Processing, 2015, 119, 431-435.	2.3	6
84	Towards geometrical calibration of x-ray computed tomography systems—a review. Measurement Science and Technology, 2015, 26, 092003.	2.6	97
85	High-Speed Measurement of Complex Shaped Parts at Elevated Temperature by Laser Triangulation. International Journal of Automation Technology, 2015, 9, 558-566.	1.0	12
86	Analysing Machining Errors Resulting from a Micromilling Process using CT Measurement and Process Simulation. , 2015, , .		1
87	An hysteresis energy-based synthesis of fully reversed axial fatigue behaviour of different polypropylene composites. Composites Part B: Engineering, 2014, 65, 17-25.	12.0	42
88	Investigating the technological limits of micro-injection molding in replicating high aspect ratio micro-structured surfaces. CIRP Annals - Manufacturing Technology, 2014, 63, 521-524.	3.6	79
89	Critical Factors in Cantilever Near-Field Scanning Optical Microscopy. IEEE Sensors Journal, 2014, 14, 3236-3244.	4.7	8
90	Industrial applications of computed tomography. CIRP Annals - Manufacturing Technology, 2014, 63, 655-677.	3.6	467

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91	Benefit quantification of interoperability in coordinate metrology. CIRP Annals - Manufacturing Technology, 2014, 63, 477-480.	3.6	2
92	Computed Tomography as a Tool for Examining Surface Integrity in Drilled Holes in CFRP Composites. Procedia CIRP, 2014, 13, 43-48.	1.9	15
93	Pulsed Laser Ablation of Lithium Ion Battery Electrodes. , 2014, , .		2
94	Quantification of Wear Rates and Plastic Deformation on Mobile Unicompartmental UHMWPE Tibial Knee Inserts. Tribology Letters, 2013, 52, 57-65.	2.6	8
95	Nanosecond and sub-nanosecond pulsed laser ablation of thin single and multi-layer packaging films. Applied Surface Science, 2013, 285, 300-308.	6.1	7
96	A 3D edge detection technique for surface extraction in computed tomography for dimensional metrology applications. CIRP Annals - Manufacturing Technology, 2013, 62, 531-534.	3.6	65
97	Fundamental correction strategies for accuracy improvement of dimensional measurements obtained from a conventional micro-CT cone beam machine. CIRP Journal of Manufacturing Science and Technology, 2013, 6, 143-148.	4.5	16
98	The use of Raman spectroscopy in the analysis of UHMWPE uni-condylar bearing systems after run on a force and displacement control knee simulators. Wear, 2013, 297, 781-790.	3.1	18
99	Picosecond and Nanosecond Pulsed Laser Ablation of Aluminium Foil. , 2013, , .		1
100	Alumina-on-alumina hip implants. Journal of Bone and Joint Surgery: British Volume, 2012, 94-B, 37-42.	3.4	29
101	Dimensional measurement of micro-moulded parts by computed tomography. Measurement Science and Technology, 2012, 23, 125401.	2.6	36
102	Correction Strategies for the Use of a Conventional Micro-CT Cone Beam Machine for Metrology Applications. Procedia CIRP, 2012, 2, 34-37.	1.9	5
103	Severe damage of alumina-on-alumina hip implants: Wear assessments at a microscopic level. Journal of the European Ceramic Society, 2012, 32, 3647-3657.	5.7	14
104	Accuracy of industrial computed tomography measurements: Experimental results from an international comparison. CIRP Annals - Manufacturing Technology, 2012, 61, 491-494.	3.6	125
105	Surface topography analysis for dimensional quality control of replication at the micrometre scale. Journal of Physics: Conference Series, 2011, 311, 012018.	0.4	0
106	Metrological performance verification of coordinate measuring systems with optical distance sensors. International Journal of Precision Technology, 2011, 2, 153.	0.2	12
107	Long term thermal drift study on SPM scanners. Mechatronics, 2011, 21, 1272-1278.	3.3	5
108	Computed tomography for dimensional metrology. CIRP Annals - Manufacturing Technology, 2011, 60, 821-842.	3.6	506

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109	Thermal drift study on different commercial scanning probe microscopes during the initial warming-up phase. <i>Measurement Science and Technology</i> , 2011, 22, 094016.	2.6	34
110	Modified Stober synthesis of highly luminescent dye-doped silica nanoparticles. <i>Journal of Nanoparticle Research</i> , 2011, 13, 4349-4356.	1.9	41
111	Traceable volume measurements using coordinate measuring systems. <i>CIRP Annals - Manufacturing Technology</i> , 2011, 60, 519-522.	3.6	37
112	Atomic force acoustic microscopy for quantitative nanomechanical characterization. <i>Wear</i> , 2011, 271, 534-538.	3.1	27
113	Uncertainty evaluation of volumetric wear assessment from coordinate measurements of ceramic hip joint prostheses. <i>Wear</i> , 2011, 270, 584-590.	3.1	57
114	Wear analysis through surface relocation. <i>Journal of Physics: Conference Series</i> , 2011, 311, 012020.	0.4	3
115	Surface measurements of radio antenna panels with white-light interferometry. <i>Proceedings of SPIE</i> , 2010, , .	0.8	1
116	Metrological performance of optical coordinate measuring machines under industrial conditions. <i>CIRP Annals - Manufacturing Technology</i> , 2010, 59, 497-500.	3.6	36
117	Critical factors in quantitative Atomic Force Acoustic Microscopy. <i>CIRP Journal of Manufacturing Science and Technology</i> , 2010, 3, 49-54.	4.5	12
118	Ceramic on Metal for Total Hip Replacement: Mixing and Matching Can Lead to High Wear. <i>Artificial Organs</i> , 2010, 34, 319-323.	1.9	31
119	Integrated friction measurements in hip wear simulations: Short-term results. <i>Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine</i> , 2010, 224, 865-876.	1.8	6
120	Error Sources in Atomic Force Microscopy for Dimensional Measurements: Taxonomy and Modeling. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2010, 132, .	2.2	27
121	Testing of x-ray microtomography systems using a traceable geometrical standard. <i>Measurement Science and Technology</i> , 2009, 20, 084021.	2.6	54
122	Coordinate metrology using scanning probe microscopes. <i>Measurement Science and Technology</i> , 2009, 20, 084002.	2.6	17
123	Geometrical modelling of scanning probe microscopes and characterization of errors. <i>Measurement Science and Technology</i> , 2009, 20, 084013.	2.6	29
124	CMM-based procedure for polyethylene non-congruous unicompartamental knee prosthesis wear assessment. <i>Wear</i> , 2009, 267, 753-756.	3.1	27
125	Study and integration of microtechnologies for smart assembly of hybrid micro-products. <i>International Journal of Mechatronics and Manufacturing Systems</i> , 2009, 2, 265.	0.1	3
126	Experimental study on performance verification tests for coordinate measuring systems with optical distance sensors. <i>Proceedings of SPIE</i> , 2009, , .	0.8	3

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127	Estimating angle-dependent systematic error and measurement uncertainty for a conoscopic holography measurement system. Proceedings of SPIE, 2009, , .	0.8	4
128	An industrial comparison of coordinate measuring systems equipped with optical sensors: the VideoAUDIT Project. , 2009, , .		1
129	Calibration artefact for the microscale with high aspect ratio: The fiber gauge. CIRP Annals - Manufacturing Technology, 2008, 57, 497-500.	3.6	26
130	Unicompartmental knee prostheses: <i>in vitro</i> wear assessment of the menisci tibial insert after two different fixation methods. Physics in Medicine and Biology, 2008, 53, 5357-5369.	3.0	21
131	Feature-Oriented Measurement Strategy in Atomic Force Microscopy. CIRP Annals - Manufacturing Technology, 2007, 56, 557-560.	3.6	16
132	Metrological validation for 3D modeling of dental plaster casts. Medical Engineering and Physics, 2007, 29, 954-966.	1.7	12
133	A New Method for Thread Calibration on Coordinate Measuring Machines. CIRP Annals - Manufacturing Technology, 2003, 52, 447-450.	3.6	26
134	Accuracy of a 3D Vision System for Inspection of Complex Geometry. , 2002, , 569-576.		1
135	Validation of the measurement performance of a three-dimensional vision sensor by means of a coordinate measuring machine. , 0, , .		1
136	Metrological analysis of a procedure for the automatic 3d modeling of dental plaster casts. , 0, , .		1
137	Precision Metal Additive Manufacturing. , 0, , .		20